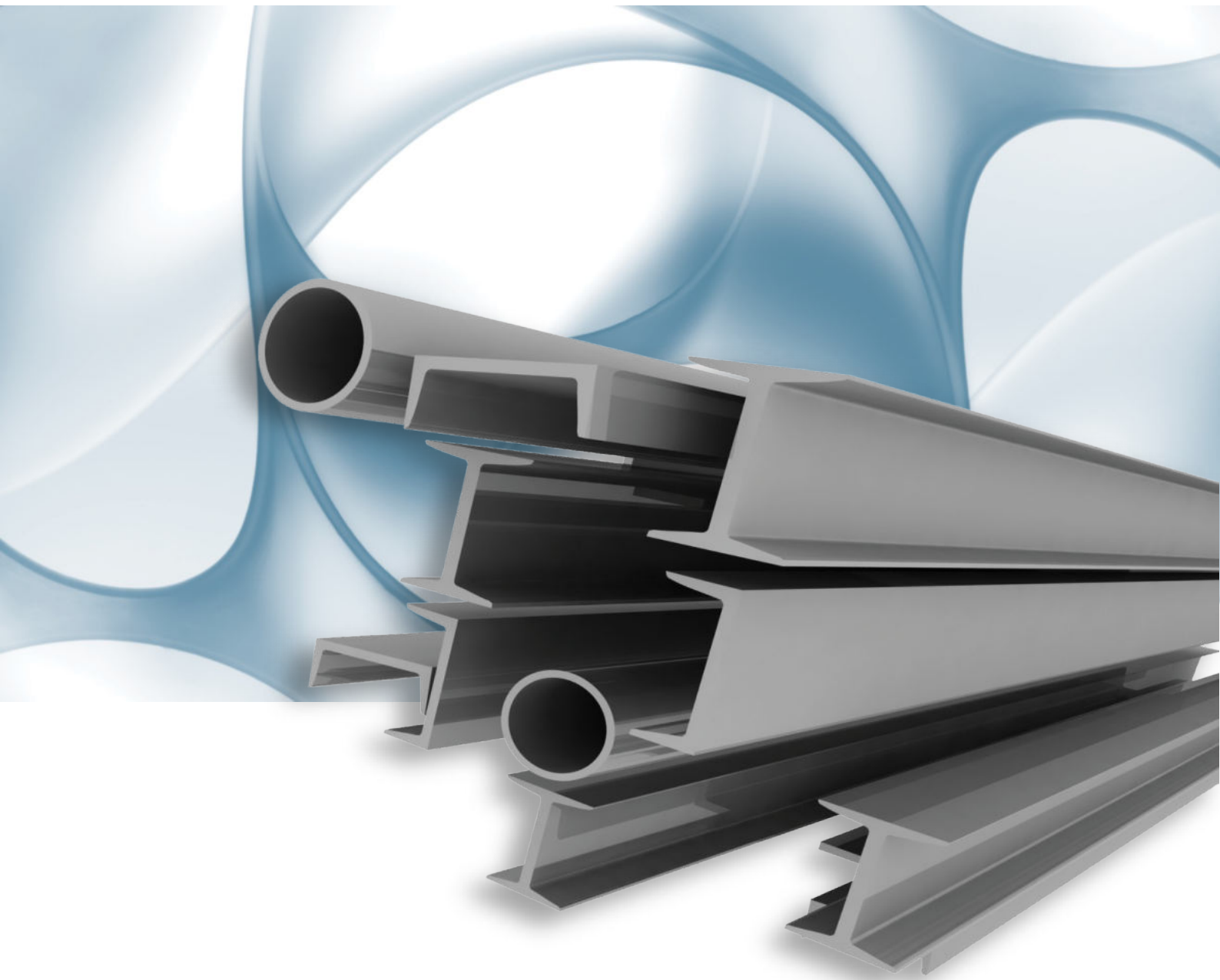


GRES STEEL



CARBON STEEL PIPES
ERW / SAW / SMLS

www.accise-asia.com

Contents

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Description of Products

ERW

(Electric Resistance Weld)

Cold formed from a ribbon of steel pulled through a series of rollers and formed into a tube which is fused through an electric charge.

Used for low/ medium pressure applications such as transportation of water / oil.

1

SAW

(Submerged Arc Weld)

Commonly refer to large diameter weld pipe & used as Line Pipe.

Mostly used to transport Oil, Water, used to build bridge span et. Commonly used standard is API 5L.

2

3

Seamless

(SMLS)

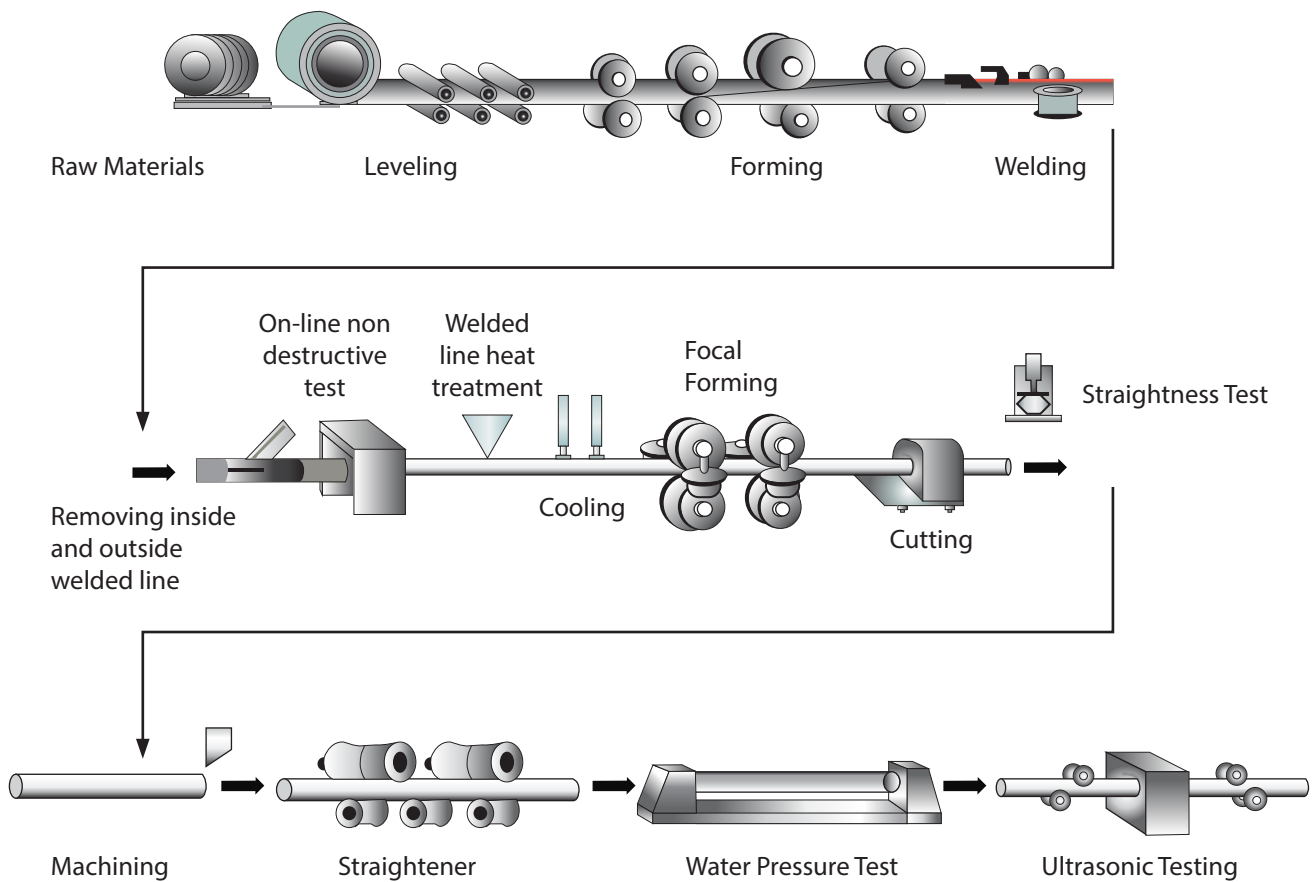
Seamless pipes are perceived to be stronger and more reliable, it does not include any welding.

It is commonly preferred for use in high pressure systems.

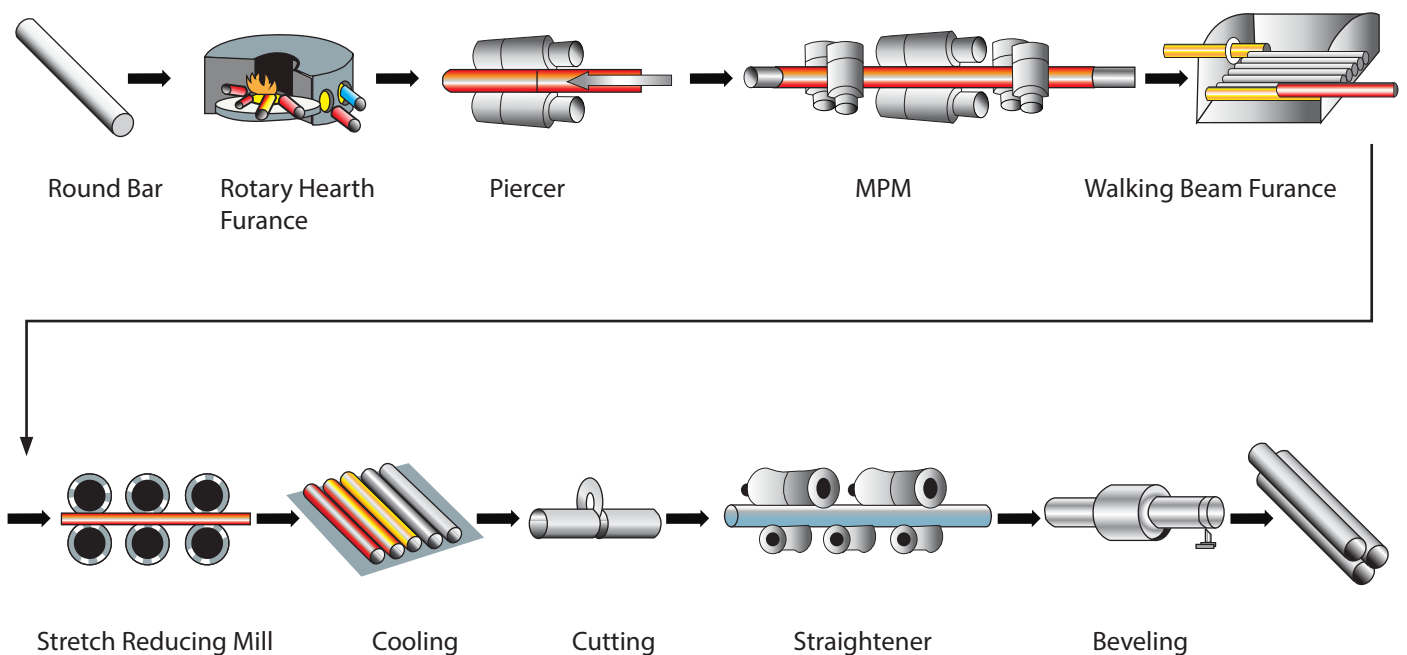
GRES STEEL

Processing of Products

Process of ERW / SAW



Process of Seamless



Specification of Products

Specifications / Standard		Application	Chemical Requirement (%)						Physical Requirement	
			C (Max)	Si (Max)	Mn (Max)	P (Max)	S (Max)	Others	Tensile Strength MPa(Psi)	Yield Strength MPa(Psi)
(BS)EN 10255	M	Carbon Steel pipes for ordinary use	0.20	-	1.4	0.04	0.030	-	320~520MPa	195MPa
	H									
BS 3601	320	Pipes for Pressure Service	0.16	-	1.30~0.70	0.040	0.040	-	340~460MPa	195MPa
API 5L	Grade B	Line Pipe	0.26	-	1.15	0.030	0.030	-	Min 415MPa (60200 psi)	Min 240MPa (42100 psi)
ASTM A53	A	Carbon Steel pipes for Ordinary use	0.25	-	0.95	0.05	0.045	-	Min 330MPa (48000 psi)	Min 205MPa (30000 psi)
	B		0.30	-	1.20	0.05	0.045		Min 415MPa (60200 psi)	Min 240MPa (42100 psi)
JIS G3452	SGP	General Piping	-	-	-	0.040	0.040	-	294(30)	-

EN10255 Class Medium

Pipe Class	Nominal Pipe Size		Outside Diameter				Wall Thickness		Weight of Black Pipe					
			Max		Min				Plain End			Screwed and Socketed		
	(inch)	(mm)	in	mm	in	mm	in	mm	lb/ft	kg/ft	kg/m	lb/ft	kg/ft	kg/m
Medium	½	15	0.586	21.7	0.831	21.1	0.104	2.6	0.813	0.369	1.210	0.828	0.376	1.220
	¾	20	1.072	27.2	1.047	26.6	0.104	2.6	1.050	0.475	1.560	1.070	0.485	1.570
	1	25	1.346	34.2	1.316	33.4	0.126	3.2	1.620	0.735	2.410	1.650	0.748	2.430
	1 ¼	32	1.687	42.9	1.657	42.1	0.126	3.2	2.080	0.945	3.100	2.130	0.966	3.130
	1 ½	40	1.919	48.8	1.889	48.0	0.126	3.2	2.400	1.090	3.570	2.460	1.120	3.610
	2	50	2.394	60.8	2.354	59.8	0.142	3.6	3.380	1.530	5.030	3.470	1.570	5.100
	2 ½	65	3.014	76.6	2.969	75.4	0.142	3.6	4.320	1.960	6.430	4.460	2.020	6.550
	3	80	3.524	89.5	3.469	88.1	0.157	4.0	5.620	2.550	8.370	5.800	2.630	8.540
	4	100	4.524	114.9	4.459	113.3	0.177	4.5	8.200	3.720	12.200	8.340	3.780	12.500
	5	125	5.534	140.6	5.459	138.7	0.196	5.0	11.150	5.060	16.600	11.200	5.080	17.100
6	150	6.539	166.1	6.459	164.1	0.196	5.0	13.240	6.000	19.700	13.300	6.030	20.300	

Elongation Min(%)		Flattening Test	Bend Test	Hydrostatic & NDT	Weight Tolerance																
Longitudinal Direction	Transverse Direction																				
20	-	DN 65 & above Weld portion: H=0.75D The other side of weld portion:H=0.6D	DN 50 & Smaller	50 Bar	+ 10 % - 8 %																
25		$H = \frac{(1+C)t}{C + t/D}$ <table border="1"> <tr> <th>Gr</th> <th>Weld Portion</th> <th>Other</th> </tr> <tr> <td>320</td> <td>0.029</td> <td>0.10</td> </tr> <tr> <td>360</td> <td>0.026</td> <td>0.09</td> </tr> <tr> <td>430</td> <td>0.023</td> <td>0.08</td> </tr> </table> *C: Constant	Gr	Weld Portion	Other	320	0.029	0.10	360	0.026	0.09	430	0.023	0.08	-	$P = \frac{20st}{D}$	+ 10 % - 8 %				
Gr	Weld Portion	Other																			
320	0.029	0.10																			
360	0.026	0.09																			
430	0.023	0.08																			
$625,000 \times \frac{A^{0.2}}{U^{0.9}}$ A: Cross - Sectional area of the test specimen in sq in U: Specified minimum ultimate tensile strength in Psi		Weld portion: H=2/3D The other side of weld portion: H=1/3D Weld ductility Test $H = \frac{3.07t}{0.07+3t/D}$ less than x 52	-	$P = \frac{2st}{D}$ P= hydrostatic test Pressure (psi) s= fiber stress (psi) t= specified thickness (inch) D= Outside Diameter (inch) <table border="1"> <tr> <th>Grade</th> <th>Size Designation</th> <th colspan="2">(percent of specified min, yield stress)</th> </tr> <tr> <td></td> <td></td> <th>Standard Test Pressure</th> <th>Alternate Test Pressure</th> </tr> <tr> <td>A</td> <td>2 3/8 & larger</td> <td>60</td> <td>75</td> </tr> <tr> <td>B</td> <td></td> <td>60</td> <td>75</td> </tr> </table>	Grade	Size Designation	(percent of specified min, yield stress)				Standard Test Pressure	Alternate Test Pressure	A	2 3/8 & larger	60	75	B		60	75	+ 10 % - 13.5 %
Grade	Size Designation	(percent of specified min, yield stress)																			
		Standard Test Pressure	Alternate Test Pressure																		
A	2 3/8 & larger	60	75																		
B		60	75																		
		Weld portion: H=2/3D The other side of weld portion: H=1/3D	For Pipe NPS 2 & under 90 X 12D 180 X 8D When order for close coiling	Specified respectively in size & grade (p=2st/D) The maximum pressure NPS 3 ≤ P=2,500 Psi NPS > 3 : P= 2,800 Psi NDT and NDT (NPS 2 and over)	+/- 10 % Remark: <u>ZinC Coating Weight</u> <u>550g / m²</u>																
30	25	H= 2/3D	DN 50 & Smaller 90 X 6D	P= 2.5 MPa	+ N. A - 12.5 %																

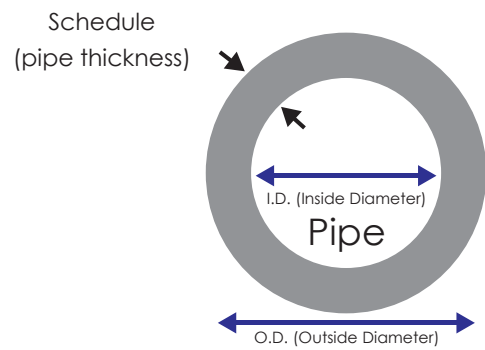
EN10255 Class Heavy

Pipe Class	Nominal Pipe Size		Outside Diameter				Wall Thickness		Weight of Black Pipe					
			Max		Min				Plain End			Screwed and Socketed		
	(inch)	(mm)	in	mm	in	mm	in	mm	lb/ft	kg/ft	kg/m	lb/ft	kg/ft	kg/m
Heavy	½	15	0.856	21.7	0.831	21.1	0.126	3.2	0.968	0.439	1.440	0.983	0.446	1.450
	¾	20	1.072	27.2	1.047	26.6	0.126	3.2	1.260	0.570	1.870	1.280	0.581	1.880
	1	25	1.346	34.2	1.316	33.4	0.157	4.0	1.980	0.896	2.940	2.010	0.912	2.960
	1 ¼	32	1.687	42.9	1.657	42.1	0.157	4.0	2.550	1.160	3.800	2.600	1.180	3.830
	1 ½	40	1.919	48.8	1.889	48.0	0.157	4.0	2.940	1.340	4.380	3.010	1.370	4.420
	2	50	2.394	60.8	2.354	59.8	0.177	4.5	4.160	1.890	6.190	4.190	1.900	6.260
	2 ½	65	3.014	76.6	2.969	75.4	0.177	4.5	5.330	2.420	7.930	5.390	2.440	8.050
	3	80	3.524	89.5	3.469	88.1	0.196	5.0	6.920	3.140	10.300	6.870	3.120	10.500
	4	100	4.524	114.9	4.459	113.3	0.212	5.4	9.740	4.420	14.500	9.910	4.500	14.800
	5	125	5.534	140.6	5.459	138.7	0.212	5.4	12.300	5.460	17.900	12.300	5.580	18.400
6	150	6.539	166.1	6.459	164.1	0.212	5.4	14.310	6.490	21.300	14.700	6.670	21.900	

API 5L / ASTM A106 / ASTM A53 ANSI PIPE SCHEDULE (METRIC)

OD's = mm
Wall thickness = mm
Weight = kg/m (plain end mass)

Nominal pipe size		OD mm	ASME B36.10												
(mm)	(Inch)		10	20	30	STD	40	60	XS	80	100	120	140	160	XXS
15	½	21.3	2.11 1.00		2.41 1.12	2.77 1.27	2.77 1.27		3.73 1.62	3.73 1.62				4.78 1.95	7.47 2.55
20	¾	26.7	2.11 1.28		2.41 1.44	2.87 1.69	2.87 1.69		3.91 2.20	3.91 2.20				5.56 2.90	7.82 3.64
25	1	33.4	2.77 2.09		2.90 2.18	3.38 2.50	3.38 2.50		4.55 3.24	4.55 3.24				6.35 4.24	9.09 5.45
32	1 ¼	42.2	2.77 2.69		2.97 2.87	3.56 3.39	3.56 3.39		4.85 4.47	4.85 4.47				6.35 5.61	9.70 7.77
40	1 ½	48.3	2.77 3.11		3.18 3.53	3.68 4.05	3.68 4.05		5.08 5.41	5.08 5.41				7.14 7.25	10.15 9.56
50	2	60.3	2.77 3.93		3.18 4.48	3.91 5.44	3.91 5.44		5.54 7.48	5.54 7.48				8.74 11.11	11.07 13.44
65	2 ½	73.0	3.05 5.26		4.78 8.04	5.16 8.63	5.16 8.63		7.01 11.41	7.01 11.41				9.53 14.92	14.02 20.39
80	3	88.9	3.05 6.46		4.78 9.92	5.49 11.29	5.49 11.29		7.62 15.27	7.62 15.27				11.13 21.35	15.24 27.68
100	4	114.3	3.05 8.37		4.78 12.91	6.02 16.07	6.02 16.07		8.56 22.32	8.56 22.32		11.13 28.32		13.49 33.54	17.12 41.03
125	5	141.3	3.40 11.56			6.55 21.77	6.55 21.77		9.53 30.97	9.53 30.97		12.70 40.28		15.88 49.11	19.05 57.43
150	6	168.3	3.40 13.83			7.11 28.26	7.11 28.26		10.97 42.56	10.97 42.56		14.27 54.20		18.26 67.56	21.95 79.22
200	8	219.1	3.76 19.97	6.35 33.31	7.04 36.81	8.18 42.55	8.18 42.55	10.31 53.08	12.70 64.64	12.70 64.64	15.09 75.92	18.26 90.44	20.62 100.92	23.01 111.27	22.23 107.92
250	10	273.1	4.19 27.78	6.35 41.77	7.80 51.03	9.27 60.31	12.70 81.55	12.70 81.55	12.70 81.55	15.09 96.01	18.26 114.75	21.44 133.06	25.40 155.15	28.58 172.33	25.40 155.15
300	12	323.9	4.57 35.98	6.35 49.73	8.38 65.20	9.53 73.88	10.31 79.73	14.27 108.96	12.70 97.46	17.48 132.08	21.44 159.91	25.40 186.97	28.58 208.14	33.32 238.76	25.40 186.97
350	14	355.6	6.35 54.69	7.92 67.90	9.53 81.33	9.53 81.33	11.13 94.55	15.09 126.70	12.70 107.39	19.05 158.10	23.83 194.96	27.79 224.65	31.75 253.56	35.71 281.70	
400	16	406.4	6.35 62.64	7.92 77.83	9.53 93.27	9.53 93.27	12.70 123.30	16.66 160.12	12.70 123.30	21.44 203.53	26.19 245.56	30.96 286.64	36.53 333.19	40.49 365.35	
450	18	457.2	6.35 70.57	7.92 87.71	11.13 122.38	9.53 105.16	14.27 155.80	19.05 205.74	12.70 139.15	23.83 254.57	29.36 309.62	34.93 363.56	39.67 408.26	45.24 459.37	
500	20	508.0	6.35 78.55	9.53 117.15	12.70 155.12	9.53 117.15	15.09 183.42	20.62 247.83	12.70 155.12	26.19 311.17	32.54 381.53	38.10 441.49	44.45 508.11	50.01 564.81	
550	22	558.8	6.35 86.54	9.53 129.13	12.70 171.09	9.53 129.13	- 129.13	22.23 294.25	12.70 171.09	28.58 373.83	34.93 451.42	41.28 527.02	47.63 600.63	53.98 672.26	
600	24	609.6	6.35 94.53	9.53 141.12	14.27 209.64	9.53 141.12	17.48 255.41	24.61 355.26	12.70 187.06	30.96 442.08	38.89 547.71	46.02 640.03	52.37 720.15	59.54 808.22	
650	26	660.4	7.92 127.36	12.70 202.72	- -	9.53 152.87	- -	- -	12.70 202.72	- -	- -	- -	- -	- -	
700	28	711.2	7.92 137.32	12.70 218.69	15.88 271.21	9.53 164.85	- -	- -	12.70 218.69	- -	- -	- -	- -	- -	
750	30	762.0	7.92 147.28	12.70 234.67	15.88 292.18	9.53 176.84	- -	- -	12.70 234.67	- -	- -	- -	- -	- -	
800	32	812.8	7.92 157.24	12.70 250.64	15.88 312.15	9.53 188.82	17.48 342.91	- -	12.70 250.64	- -	- -	- -	- -	- -	
850	34	863.6	7.92 167.20	12.70 266.61	15.88 332.12	9.53 200.31	17.48 364.90	- -	12.70 266.61	- -	- -	- -	- -	- -	
900	36	914.4	7.92 176.96	12.70 282.27	15.88 351.70	9.53 212.56	19.05 420.42	- -	12.70 282.27	- -	- -	- -	- -	- -	
950	38	965.2				9.53 224.54			12.70 298.24						
1000	40	1016.0				9.53 236.53			12.70 314.22						

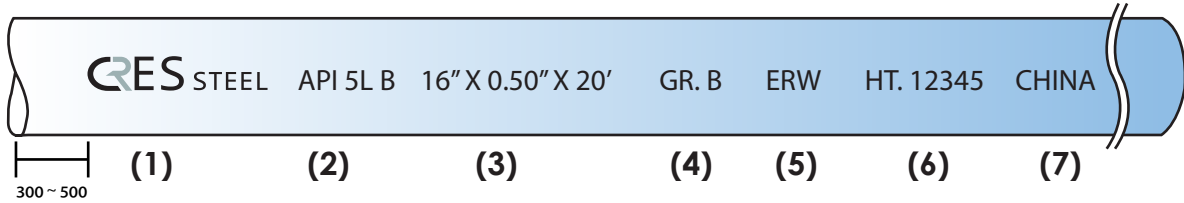


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Email: sales@accise-asia.com Fax: +65 6749 0844 Tel: +65 6748 4292

Marking Standard

Marking example: API 5L Grade B 16" X 0.50" X 20'



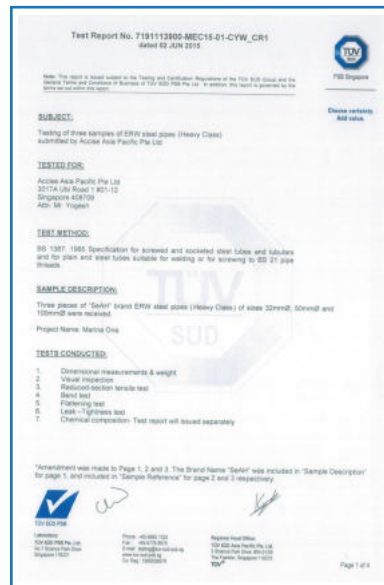
- (1) Marking (Brand)
- (2) Specification
- (3) Size (Diameter X Wall Thickness X Length)
- (4) Grade
- (5) Type of pipe (ERW / SAW / SMLS)
- (6) Heat No.
- (7) Origin

Packaging Standard

(HEXAGONAL PACKAGING)



Certificate / Test Report



Coating Standard

(CUSTOMIZED)



Black Painted Pipe



Hot Dip Galvanized Pipe



Epoxy Pipe



Red Oxide Pipe



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